



R.M.K. ENGINEERING COLLEGE
RSM Nagar, Kavaraipettai – 601 206



Department of Electrical and Electronics Engineering

List of courses offered during 2021-22(Odd Semester)

Sl. No.	Semester	Theory/Practical	Course Code / Course Name
1	3	Theory	20MA301 – Transforms and Partial Differential Equations
2	3	Theory	20EE301 - Digital Logic Circuits
3	3	Theory	20EE302 – Electromagnetic Theory
4	3	Theory	20EE303 – DC machines and Transformers
5	3	Theory	20EE304– Linear Integrated circuits
6	3	Theory	20CS306 – Data structures and Algorithms
7	3	Practical	20EE311- Analog and Digital Electronics Laboratory
8	3	Practical	20EE312- DC Machines and Transformers Laboratory
9	3	Practical	20EE313-Mini Project
10	3	Practical	20CS 313-Aptitude and coding skills -1
11	5	Theory	EE8501 – Power System Analysis
12	5	Theory	EE8551- Microprocessor And Microcontroller
13	5	Theory	EE 8591 – Digital Signal Processing
14	5	Theory	EE8552– Power Electronics
15	5	Theory	CS 8392 – Object Oriented Programming
16	5	Theory	OAN551- Sensors and Transducers
17	5	Practical	EE8511- Control and Instrumentation Laboratory
18	5	Practical	HS8581 - Professional Communication
19	5	Practical	CS8383- Object Oriented Programming Laboratory
20	7	Theory	EE8701 – High voltage engineering
21	7	Theory	EE8702 – Power system operation and control
22	7	Theory	EE8703– Renewable Energy Systems
23	7	Theory	GE 8077- Total Quality management
24	7	Theory	OCS752 –Introduction to C programming
25	7	Practical	EE6711 - Power System Simulation Lab
26	7	Practical	EE6712- Comprehension Laboratory Lab

Course outcomes- 2021-2022 (odd semester)

Third Semester

Course Code: 20MA301	
Course Name: Transforms And Partial Differential Equations	
CO	Course outcome(CO) - Statements
CO – 1	Employ the Fourier series concept in Engineering Problems
CO – 2	Identify the solution of Fourier transform in continuous time signals.
CO – 3	Elucidate the difference equation using Z-transform.
CO – 4	Compute the solutions of the partial differential equation.
CO – 5	Utilize the Fourier series for heat and wave equations.

Course Code:20EE301	
Course Name: Digital Logic Circuits	
CO	Course outcome(CO) - Statements
CO – 1	Apply Boolean algebra and gate level minimization to design digital circuits.
CO – 2	Design various combinational logic circuits
CO – 3	Design and analyze the synchronous sequential logic circuits.
CO – 4	Design and analyze the asynchronous sequential logic circuits and to get used to Verilog coding
CO – 5	Apply ROM, PLA and PAL for developing combinational logic circuits.
CO-6	Compare the operation and characteristics of various digital logic families.

Course Code: 20EE302	
Course Name: Electro Magnetic Theory	
CO	Course outcome(CO) - Statements
CO – 1	Understand the basic mathematical concepts related to electromagnetic vector fields.
CO – 2	Understand the basic concepts about electrostatic fields, electrical potential, energy density and their applications
CO – 3	Acquire the knowledge in magneto static fields, magnetic flux density, vector potential and its applications
CO – 4	Understand the different methods of emf generation and Maxwell's equations.
CO – 5	Understand the basic concepts electromagnetic waves and characterizing parameters.
CO-6	Understand and compute electromagnetic fields and apply them for design and analysis of electrical equipment and systems.

Course Code: 20EE303	
Course Name: DC Machines and Transformers	
CO	Course Outcome(CO) - Statement
CO – 1	Apply the laws governing the electromechanical energy conversion for singly and multiple excited systems.
CO – 2	Explain the construction and working principle of DC machines.
CO – 3	Interpret various characteristics of DC machines.
CO – 4	Compute various performance parameters of the machine, by conducting suitable tests.
CO – 5	Draw the equivalent circuit of transformer and predetermine the efficiency and regulation.
CO-6	Describe the working principle of auto transformer, three phase transformer with different types of connections.

Course Code:20EE304	
Course Name: LINEAR INTEGRATED CIRCUITS	
CO	Course outcome(CO) - Statements
CO – 1	Demonstrate the fabrication of IC's
CO – 2	Analyze the performance characteristics of Op-Amp.
CO – 3	Design Op-Amp based circuits for engineering applications
CO – 4	Classify and comprehend the working principle of data converters.
CO – 5	Illustrate the function of application specific IC's such as VCO, PLL and its applications.
CO - 6	Classify the different voltage regulators using Op-Amp.

Course Code: 20CS 305

Course Name: Data Structures and Algorithms

CO	
CO – 1	Explain abstract data types for linear data structures.
CO – 2	Apply the appropriate linear data structures to solve problems
CO – 3	Identify and use appropriate tree and graph data structures in problem solving.
CO – 4	:Critically analyze the various sorting and searching algorithms.
CO – 5	Solve and analyse problems using various algorithm design techniques

Laboratory

20EE311	Analog and Digital Electronics Laboratory
CO	Course outcome(CO) - Statements
CO – 1	Interpret and understand the characteristics of semiconductor devices
CO – 2	Demonstrate different configurations of transistors
CO – 3	Employ voltage-controlled transistor for generating saw tooth waveform
CO – 4	Design and implement combinational logic circuits and sequential logic circuits
CO – 5	Demonstrate the experimental implementation of differential amplifiers and test operational amplifier based linear and nonlinear systems
CO – 6	Compare the working of multi vibrators using op-amp, IC 555 timer and analyze working of voltage regulator and PLL using LM317 and NE/ SE 566 IC

Course code :20 EE 312	
Course Name: DC machines and Transformers Laboratory	
CO	Course outcome(CO) – Statements
CO – 1	Construct the circuit with appropriate connections for the given DC machine/transformer
CO – 2	Experimentally determine the characteristics of different types of DC machines
CO – 3	Demonstrate the speed control techniques for a DC motor for industrial applications.
CO – 4	Identify suitable methods for testing of transformer and DC machines.
CO – 5	Predetermine the performance parameters of transformers and DC motor
CO – 6	Understand DC motor starters and 3-phase transformer connection

Course code :20 EE 313	
Course Name: Mini Project	
CO	Course outcome(CO) – Statements
CO – 1	Interpret literature with the purpose of formulating a project proposal
CO – 2	Solve the identified problem with the modern technology and innovative thinking, giving priority to real life problem.
CO – 3	Identify the key stages in development of the project
CO – 4	Propose to work as a team and to focus on getting a working project done within astipulated period of time
CO – 5	Develop a prototype or a working model.
CO – 6	Discuss and report effectively project related activities and findings

Course code : 20CS313

Course Name: Aptitude and Coding Skills -1

CO	Course outcome(CO) – Statements
CO – 1	Develop vocabulary for effective communication and reading skills.al
CO – 2	Build the logical reasoning and quantitative skills.
CO – 3	Develop error correction and debugging skills in programming.

Fifth Semester

Course Code: EE8501	
Course Name: Power System Analysis	
CO	Course Outcome (CO) - Statement
CO – 1	Model the power system under steady state operating condition
CO – 2	Understand and apply iterative techniques for power flow analysis
CO – 3	Model and carry out symmetrical short circuit studies on power system.
CO – 4	Model and carry out unsymmetrical short circuit studies on power system
CO – 5	Model and analyze stability problems in power system
CO-6	Model and analyze the transient behaviour of power system when it is subjected to a fault

Course Code: EE8551	
Course Name: Power Electronics	
CO	Course outcome(CO) - Statements
CO – 1	Summarize the fundamental concepts of power switching devices.
CO – 2	Analyze single phase power converter circuits and their application.
CO – 3	Analyze three phase power converter circuits and their application.
CO – 4	Analyze switching regulator circuits and their application.
CO – 5	Analyze various harmonic reduction techniques.
CO - 6	Develop skills to simulate converter circuits using simulation software.

Course Code: EE8551	
Course Name: Microprocessors and Microcontrollers	
CO	Course outcome(CO) - Statements
CO – 1	Describe the functional blocks of 8085 microprocessor
CO – 2	Develop an simple assembly language program of 8085 microprocessor
CO – 3	Explain the architecture of 8051 microcontroller
CO – 4	Analyze the data transfer information through serial and parallel ports.
CO – 5	illustrate how the different peripherals are interfaced with Microprocessor and microcontroller
CO - 6	Develop a program for various application of 8051

Course Code: OAN551	
Course Name: Sensors & Transducers	
CO – 1	Understand the concepts of measurement technology, classification of transducers & Expertise in various calibration techniques and signal types for sensors
CO – 2	Understand the working of various motion, proximity and ranging sensors
CO – 3	Learn the various sensors used to measure various physical parameters like force, magnetic and heading Sensors
CO – 4	Study the basic principles of optical, pressure, temperature sensors & smart sensors
CO – 5	Apply the various sensors in the Automotive and Mechatronics applications
CO – 6	Implement the DAQ systems with different sensors for real time applications

Course Code:EE8591	
Course Name: Digital Signal Processing	
CO	Course outcome(CO) - Statements
CO – 1	Ability to understand the basic concepts of Signals and systems, their mathematical representation and quantization effects.
CO – 2	Ability to apply the Z transformation techniques on discrete time systems.
CO – 3	Ability to apply the concepts of the Discrete Fourier transformation techniques & their computation.
CO – 4	Ability to analyze the types of Finite Impulse Response filters and their design for digital implementation.
CO – 5	Ability to analyze the types of Finite Impulse Response filters and their design for digital implementation.
CO-6	Ability to understand the architecture and addressing modes of programmable digital signal processors.

Course Code: CS8392	
Course Name: Object Oriented Programming	
CO	Course outcome(CO) - Statements
CO – 1	Develop Java programs using OOP principles
CO – 2	Develop Java programs using the concepts of inheritance and interfaces
CO – 3	Build Java applications using exceptions and I/O streams
CO – 4	Develop Java applications with threads and generics classes
CO – 5	Develop interactive Java programs using swings
CO-6	Develop an application based upon the concepts of Java.

Laboratory

Course Code:EE8511	
Course Name: Control and Instrumentation Laboratory	
CO	Course outcome(CO) - Statements
CO – 1	Ability to understand control theory and apply them to electrical engineering
CO – 2	Ability to analyze the various types of converters
CO – 3	Ability to design compensators
CO – 4	Ability to understand the basic concepts of bridge networks
CO – 5	Ability to the basics of signal conditioning circuits
CO – 6	Ability to study the simulation packages.

Course Code:HS8581	
Course Name: Professional Communication	
CO	Course outcome(CO) - Statements
CO – 1	Enhance the Employability and Career Skills of students
CO – 2	Orient the students towards grooming as a professional
CO – 3	Make them Employability Graduates
CO – 4	Develop their confidence and help them attend interviews successfully.

Course Code:CS8383	
Course Name: Object Oriented Programming Lab	
CO	Course outcome(CO) - Statements
CO – 1	To build software development skills using java programming for real-world
CO – 2	To understand and apply the concepts of classes, packages, interfaces, array list, exception handling and file processing.
CO – 3	To develop applications using generic programming and event handling.

Seventh Semester

Course code : EE8701	
Course Name: High voltage engineering	
CO	Course outcome(CO) - Statements
CO-1	Understand various types of over voltages experienced by the power system
CO-2	Understand and explain the breakdown mechanism of different types of dielectrics
CO-3	Explain the generation of High voltages and currents and apply the same for calculating the voltage to be generated for testing an apparatus of a particular rated voltage
CO-4	Understand various methods of HV measurements and identify the appropriate measuring system for various types of over voltages and currents
CO-5	Understand process of testing of various power system apparatus
CO-6	Understand the significance of insulation coordination and apply the same for fixing the BIL of an apparatus

Course code : EE8702	
Course Name: POWER SYSTEM OPERATION AND CONTROL	
CO	Course outcome(CO) - Statements
CO-1	Ability to understand the day-to-day operation of electric power system.
CO-2	Ability to analyze the control actions to be implemented on the system to meet the minute-to-minute variation of system demand.
CO-3	Ability to understand the significance of power system operation and control.
CO-4	Ability to acquire knowledge on real power-frequency interaction.
CO-5	Ability to understand the reactive power-voltage interaction.
CO-6	Ability to design SCADA and its application for real time operation.

Course code : EE8703 Course Name: Renewable Energy Systems	
CO	Course outcome(CO) - Statements
CO-1	Understand the current energy scenario, environment aspect and renewable energy resources in India
CO-2	Understand the basic concept of wind energy conversion system and basics of grid Integration.
CO-3	Understand the solar energy conversion system and different types of solar plants.
CO-4	Experiment with stand alone and grid connected PV system.
CO-5	Explain the basic of renewable sources like Hydro, biomass and Geothermal
CO-6	Explain the basic of different ocean energy system and Fuel cell.

Course code: GE 8077	
Course Name: Total Quality Management	
CO	Course outcome(CO) - Statements
CO-1	Understand the quality philosophies and customer focused managerial system
CO-2	Summarize the quality management principles
CO-3	Apply six sigma concept in manufacturing and service sector
CO-4	Determine the tools and techniques for quality improvement.
CO-5	Analyze standards and auditing system on implementation of TQM.
CO-6	Analyze standards for the operation of EMS.

Course code : GE8704	
Course Name: Human Rights	
CO	Course outcome(CO) - Statements
CO-1	Understand the origin and detailed classification about the human rights
CO-2	Describe the evolutionary concepts and theories of human rights
CO-3	Develop the critical thinking and understanding of UN Laws and its agencies
CO-4	Understand the constitutional Provisions & Guarantees of Human rights in India
CO-5	Demonstrate the Human Rights Issues of disadvantaged people
CO-6	Apply the implementation of Human rights commission, Judiciary and social movements

Course code : OCS752	
Course Name: Introduction to C Programming	
CO	Course outcome(CO) - Statements
CO-1	Develop algorithmic solutions to simple computational problems using basic constructs
CO-2	Develop simple applications in C using Control Constructs
CO-3	Design and implement applications using arrays
CO-4	Represent data using string and string operations
CO-5	Decompose a C program into functions and pointers
CO-6	Represent and write program using structure and union

Laboratory

Course code : EE8711	
Course Name: Power System Simulation lab	
CO	Course outcome(CO) - Statements
CO-1	Model the Transmission line of power system
CO-2	Develop Bus Impedance and Admittance matrices for a network
CO-3	Analysis of Load flow by numerical methods
CO-4	Determine the fault current for the N bus system
CO-5	Examine the stability level of Single and Multi machine system
CO-6	Analyze the load frequency dynamics of multi area system

Course code : EE8712	
Course Name: Comprehension Laboratory	
CO	Course outcome(CO) - Statements
CO-1	Explain Engineering fundamentals
CO-2	Apply mathematics to engineering problem
CO-3	Apply Engineering fundamentals to complex circuits
CO-4	Take part in discussion as a leader in diverse teams
CO-5	Extend knowledge on communication and presentation skills
CO-6	Develop managerial skills to establish start ups